



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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August 21, 1996

Tom Bachtell  
Buena Ventura Resources Corporation  
215 South State Street, Suite 550  
Salt Lake City, Utah 84111

Dear Mr. Bachtell:

Re: Review of Notice of Intention to Commence Large Mining Operations, Buena Ventura Resources Corporation (BVRC), Asphalt Ridge Tar Sands Mine, M/047/032, Uintah County, Utah

The Division has completed its initial review of your Large Mining Operations Notice of Intention which was received April 30, 1996. After reviewing the information, the Division has a number of comments which will need to be responded to. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

## **R647-4-105 Maps, Drawings & Photographs**

### **105.1 Topographic base map, boundaries, pre-act disturbance**

Please provide a map clearly showing boundaries of the pre-existing disturbances associated with the Uintah County Mine (M/047/022) and the BVRC small mine operation AROC #1 (S/047/032). The supplemental map received July 18, 1996, for the Uintah County Amendment shows some of the currently existing features, but lacks borders around the existing disturbed areas. (AAG)

### **105.2 Surface facilities map**

Please modify Exhibit A to show all roads shown on figure 3. Figure 3 needs to include power lines and gas lines, propane or natural gas tanks (if they are proposed or present). Please modify Figure 3 and/or Exhibit A to show all drainage control structures or provide a separate hydrology map as suggested in section 105.3.15 below. The supplemental map shows the proposed berm which is believed to be one (a single?) overburden and topsoil storage area. Please confirm this in the text of your submission. Please modify Exhibit A to include a border identifying each overburden and topsoil storage area, or provide a separate version of this drawing with these features appropriately labeled. (AAG)

Locations and size of all topsoil, subsoil and overburden stockpiles needs to be shown on a surface facilities map. (LK)

### **105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)**

#### **3.12 Plans, profiles, cross sections of roads, etc. to remain**

Please provide a drawing showing typical cross sections of the pit excavation during operations and at final reclamation. Include typical bench widths, interbench highwall angles, and vertical spacing. (AAG)

#### **3.15 Sediment ponds, diversion channels, culvert sizes & locations**

Please provide a separate version of Exhibit A which includes all drainage control structures (diversion ditches, culverts, sediment ponds, etc.) and show the hydrologic collection basins.(?) (AAG)

#### **3.16 Baseline Information Maps**

A soils map needs to be prepared that shows the various soil types that are within the proposed permit area. The proposed disturbed area should be overlain on this map. Detailed analysis for each soil type that would be potentially disturbed will be required (see comments under R647.4.106.5 for parameters to be analyzed). (LK)

#### **3.17 Reclamation treatments map**

Please provide a reclamation treatments map on the same scale as the facilities map. This map should include cross hatching or color coding to indicate reclamation treatments to be performed on the various portions of the site. For example, roads would be coded to show the reclamation treatments of ripping, topsoiling and seeding, while another area would be coded to show reclamation treatments of topsoiling and seeding. (AAG)

### **R647-4-106 Operation Plan**

#### **106.2 Type of operations conducted, mining method, processing etc.**

Will natural gas or propane be supplied to the site via pipeline, or will there be storage tanks located onsite? Please include gas pipelines or storage tanks on the surface facilities map. A portion of the process water will come from precipitation collected at the facility. Where will the other portion of process water come from and what is the estimated quantity of water needed? Will the process facilities require concrete foundations and paving or will the equipment be semi-permanent? The proposed size and location of the water supply pipeline should be shown on the surface facilities map as well. (AAG)

#### **106.3 Estimated acreages disturbed, reclaimed, annually?**

Please provide an estimate of the total site disturbance for years one through five of the projected mine life. Include the existing small mine permit disturbance as part of the total site disturbance. (AAG)

#### **106.4 Nature of materials mined, waste & estimated tonnages**

What is the estimated tonnage of ore and waste to be mined annually? Please provide copies



of the laboratory information characterizing the waste sands as mentioned on page 9 of the submission. (AAG)

**106.5 Existing soil types, location, amount**

Please describe the existing soil types, locations and depths within the project area. If the soil types are the same as those in the existing permit area, please indicate. What is the estimated volume of soils to be salvaged and placed in the visual buffer berm? Please note, it is important to segregate topsoil, subsoil and overburden into separate piles and to replace them in the same order upon reclamation. Locations of topsoil, subsoil and overburden stockpiles needs to be shown on a facilities map (see comments under R647-4-105.3). A list of soil parameters is attached which should be used to analyze each soil that will be impacted by the mining operation. Some of the parameters for some soils have already been provided in Appendix A - Soil Analysis Information. (LK)

Please provide additional information supporting the 1,635 ft<sup>3</sup> volume of topsoil to be stockpiled listed on page 10, section 5 of the submission. Appendix A, table of Topsoil Characteristics and Ratings does not provide specifics to support this volume of topsoil. (AAG)

**106.6 Plan for protecting & redepositing soils**

Please describe how soil stockpiles will be protected from further impacts during operations and how they will be redeposited upon reclamation. (LK)

**106.9 Location & size of ore, waste, tailings, ponds**

What is the proposed size (tonnage or volume) of ore to be stockpiled and the amount of overburden to be removed and placed? Will this operation include any sediment ponds? (AAG)

**R647-4-107 Operation Practices**

**107.1 Public safety & welfare**

Please describe the measures to be taken prior to and during blasting to ensure public safety. (AAG)

**107.1.15 Constructing berms, fences, etc. above highwalls**

Please describe the measures to be taken to prevent public access to the active mine site and highwall areas during operations. (AAG)

**107.3 Erosion control & sediment control**

On page 14 of the plan the operator mentions the fact that they will use "good mining practices" to control erosion. Please be more specific as to what those practices will be and how they will be implemented both during the mining and reclamation phases. (TM)

#### **107.5 Suitable soils removed & stored**

A soils analysis needs to be provided for each soil type that is within the proposed permit area. The following parameters need to be analyzed: Texture, Saturation Percentage, Percent Organic Matter, pH, EC (conductivity), Sodium Absorption Ratio, Alkalinity,  $\text{CaCO}_3$ , Cation Exchange Capacity, Selenium, Nitrogen, Phosphorus and Potassium. Describe how soils will be removed and stored for later reclamation. Refer also to comments under R647-4-106.5. (LK)

#### **107.6 Concurrent reclamation**

The application states in several places that concurrent reclamation will occur following a reasonable operation period. Please estimate the length of this operational period. Please describe the actual reclamation activities proposed for concurrent reclamation. Will this concurrent reclamation be complete reclamation (earthwork and seeding) or partial reclamation (such as earthwork only)? (AAG)

#### **R647-4-108 Hole Plugging Requirements**

Please describe how the drill holes shown on Exhibit A will be or were plugged. (TM)

#### **R647-4-109 Impact Assessment**

##### **109.1 Impacts to surface & groundwater systems**

###### **Ground Water**

On page 9 of the application, the operator discusses the occurrence of two wells located approximately 3/4 of a mile from the BVRC property. It would be appropriate to show their location on a map as well as discuss the potential for contamination of these wells.

If there is no reason to believe that these wells could be contaminated, then the operator needs to address the reason why they feel this is the case. The application does not mention the status of the acquisition of a groundwater and construction permit from the State Division of Water Quality. What is the status of these applications? (TM)

###### **Surface Water**

On page 13 of this application, the operator states that they intend to apply for a Stormwater permit. The plan fails to provide any specific information related to surface water runoff from stormwater and how it will be contained on site and inputted back into the system. Public concerns have been raised regarding oily discharges from ditches associated with ongoing tar sands mining operations, as well as mosquito proliferation from standing waters, and water releases affecting septic tanks. Please provide information addressing your surface water management designs including specifics on ditches, pits, etc. to show how these sorts of problems can be prevented/minimized. (TM)

##### **109.4 Slope stability, erosion control, air quality, safety**

Regraded reclaimed slopes must have erosion control measures implemented to prevent the



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loss of topsoil. Please describe the measures to be implemented on reclaimed slopes to control erosion, enhance slope stability and promote vegetative success. Suggested methods could include (but are not limited to), surface roughening techniques such as contour furrowing, terracing, gouging, and replacement of natural features such as grubbed trees/brush, rocks/boulders, etc. (TM)

Page 14, section 4 of the application states that slope stability will be maintained during mining operations. Overburden piles and on-site slopes will be sloped at 2h:1v to minimize safety hazards. Does the term "on-site slopes" refer to highwalls during operations? (AAG)

#### **R647-4-110 Reclamation Plan**

##### **110.2 Roads, highwall, slopes, drainages, pits, etc. reclaimed**

Please describe the tasks proposed for reclamation of highwalls. AAG  
See comments found under R647-4-109.4. (TM)

#### **R647-4-111 Reclamation Practices**

##### **111.2 Reclamation of natural channels**

If any natural channels are to be reclaimed please describe how drainage patterns will be reestablished and how undisturbed drainage will be routed through the reclaimed areas following mining. (TM)

##### **111.9 Dams & impoundments left self draining & stable**

There is no discussion regarding final site topography. Please provide the anticipated postmining topography details, so drainage patterns from pits and associated areas of the site can be assessed. Also refer to comments under 111.2 above. (TM)

##### **111.12 Topsoil redistribution**

See comments under R647-4-106.5 and 106.6. (LK)

##### **111.13 Revegetation-adaptable species**

The proposed revegetation seed mix is not adequate to meet reclamation standards for a diverse, permanent cover. In addition, it contains weedy species that should not be used for reclamation. Attached is a proposed seed mix that should provide for a permanent, diverse vegetation cover. If acceptable to BVRC, please acknowledge and include it as part of your reclamation plan. (LK)

#### **R647-4-112 Variance**

BVRC has requested no variances in this submission. This implies that this operation will comply fully with all portions of Rules R647-4-107 Operation Practices, R647-4-108 Hole Plugging Requirements, and R647-4-111 Reclamation Practices. (AAG)

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**R647-4-113 Surety**

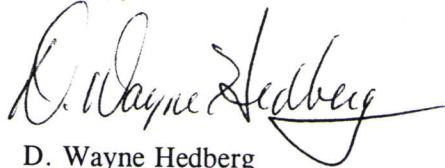
The reclamation estimate does not contain enough information describing specific reclamation treatments and the areas which will receive these treatments. The reclamation treatments map requested in section R647-4-105.3.17 will help provide the additional detail required. The reclamation cost estimate in the submission did not include any costs for demolition or removal of structures. Are these structures permanent or mobile? The breakdown of disturbed areas for the entire site was not clear. Does the 30 acre figure include the visual berm area? Using the areas included in this description the following breakdown was arrived at: 30 acres = 5 acres (processing facilities) + 3 acres (roads) + 22 acres (pit). Using these acreages the Division prepared a draft reclamation estimate (copy attached). The draft surety amount is \$95,100 in year 2001 dollars. The draft estimate includes assumptions for the reclamation tasks, acreages and volumes involved. The estimate will need to be revised after the additional information requested in this letter is received. (AAG)

**R647-4-116 Public Notice & Appeals**

The Division is not prepared to issue Tentative Approval for this project at this time. After receiving the additional information requested in this letter we may be able to issue Tentative Approval. A Notice of Tentative Approval must be published by the Division which will begin a 30-day public comment period. After the completion of the public comment period the Division will be prepared to present the amount and form of reclamation surety to the Board of Oil, Gas and Mining at their monthly hearing for approval. The form of reclamation surety and reclamation contract (FORM MR-RC) will need to be signed and in a final form prior to that Board Hearing date.

Please contact me or the other members of the Minerals Staff if you have any questions regarding this review letter or the approval process.

Sincerely,



D. Wayne Hedberg  
Permit Supervisor  
Minerals Reclamation Program

jb  
Attachments: soil parameters, recommended seed mix, draft surety estimate  
cc: Mary Ann Wright, Associate Director  
Lowell Braxton, Deputy Director  
M47-32RV.LMO

**Division of Oil, Gas and Mining**  
*Minerals Program*

Baseline Soils and Overburden  
*Recommended Laboratory Analyses*

- |    |                                |     |  |
|----|--------------------------------|-----|--|
| 1. | Texture                        | 9.  | * CaCO <sub>3</sub>                            |
| 2. | pH                             | 10. | * Sulfur (acid potential)                      |
| 3. | EC (conductivity)              | 11. | Selenium                                       |
| 4. | SAR                            | 12. | Total nitrogen                                 |
| 5. | * Saturation Percentage        | 13. | Nitrate nitrogen                               |
| 6. | Percent Organic Matter         | 14. | Phosphorus (as P <sub>2</sub> O <sub>5</sub> ) |
| 7. | CEC (cation exchange capacity) | 15. | Potassium (as K <sub>2</sub> O)                |
| 8. | Alkalinity                     |     |  |



Recommended Revegetation Species List  
for

Buena Ventura Resources Corporation  
Asphalt Ridge Tar Sands Mine  
M/047/032

Prepared by DOGM July 30, 1996

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
'Hycrest' crested wheatgrass	<u>Agropyron cristatum 'Hycrest'</u>	0.5
Intermediate wheatgrass	<u>Agropyron intermedium</u>	1.0
'Piute' Orchard Grass	<u>Dactylis glomerata 'Piute'</u>	0.5
Basin Wildrye	<u>Elymus cinereus</u>	1.5
Indian ricegrass	<u>Oryzopsis hymenoides</u>	1.5
Cicer Milkvetch	<u>Astragalus cicer</u>	1.0
Ladac Alfalfa	<u>Medicago sativa</u>	1.0
Yellow sweetclover	<u>Melilotus officinalis</u>	0.5
Palmer penstemon	<u>Penstemon palmeri</u>	0.5
Small burnet	<u>Sanguisorba minor</u>	1.5
Wyoming big sagebrush	<u>Artemisia tridentata wyomingensis</u>	0.1
4-Wing Saltbush	<u>Atriplex canescens</u>	1.0
Rubber rabbitbrush	<u>Chrysothamnus nauseosus</u>	0.25
Forage kochia	<u>Kochia prostrata</u>	0.5
Bitterbrush	<u>Purshia tridentata</u>	1.0
Total		12.35 lbs/ac

\*This the recommended drill seeding rate.

If the species are to be broadcast seeded, increase the rate by 50%.



**RECLAMATION ESTIMATE****DRAFT**

Buena Ventura Resources Corporation

last revision

**08/20/96**

Asphalt Ridge Tar Sands Mine

filename m47-32.wb2

page "ESTIMATE"

M/047/032

Uintah County

Prepared by Utah State Division of Oil, Gas &amp; Mining

**Details of Final Reclamation****-RECLAMATION TASKS, VOLUMES, & ACREAGES USED IN THIS ESTIMATE ARE ASSUMED***-Haul roads 3 acres; processing facilities 5 acres, berm 5 acres, ASSUME pit area 22 acres**-ASSUME demolition & removal of all processing facilities**-ASSUME visual berm to be regraded over partially backfilled pit areas**-ASSUME old pit highwalls will remain benched & partially backfilled against**-Pits will be partially backfilled with reject sands, then overburden, then topsoil**-Haul roads will be ripped/regraded, topsoiled & revegetated**-Revegetation will include mulching, disking, fertilizing & drill or broadcast seeding**-Existing SMO disturbance 5 acres; visual berm ~ 5 acres in addition to 30 acres???**-Volumes of sand, overburden & topsoil are calculated using assumptions**-Estimated disturbance for the Asphalt Ridge Tar Sands Mine = **30.0 acres***

Activity	Quantit	Units	\$/unit	\$	notes
Demolition & removal of processing facilities	1	sum	5,000	5,000	(1)
Grading sand backfill (1 ft depth, 22 acre)	35,493	CY	0.00	0	(2)
Placing overburden over backfill( 4ft, 22 acre)	61,307	CY	0.31	19,005	(3)
Grading visual berm ( 5 acre, 10 ft high)	80,667	CY	0.31	25,007	(3)
Placing topsoil on overburden(8 inch depth)	23,662	CY	0.31	7,335	(3)
Ripping haul roads	3.0	acre	228	684	(4)
Placing soil on haul roads (1ft depth)	3.0	acre	305	915	(5)
Mulching (1 ton/acre) & crimping/discing	30.0	acre	110	3,300	(6)
Fertilizing (200 lb/acre diammonium phosphate)	30.0	acre	90	2,700	(7)
Drill seeding (estimate 80% of area)	24.0	acre	180	4,320	(8)
Broadcast seeding (estimate 20%)	6.0	acre	184	1,104	(9)
General site cleanup & trash removal	30.0	acre	50	1,500	(1)
Monitoring	3	year	600	1,800	(1)
Mobilization	2	equip	1,000	2,000	(1)
Reclamation supervision (est 6 days)	48	hours	30	1,440	(1)
	Subtotal			76,110	
10% Contingency				7,611	
	Subtotal			\$83,721	
Escalate for 5 years at 2.58% per yr				11,372	
	Total			\$95,093	
	Rounded surety amount in yr 2001-\$			<b>\$95,100</b>	
Average cost per disturbed acre =		\$3,170			

Average cost per disturbed acre =

Rounded surety amount in yr 2001-\$

**\$95,100**

\$3,170

notes

- |     |   |
|-----|---|
| (1) | DOGM  |
| (2) | D10N, 50 ft push (\$0.19/CY)                |
| (3) | D10N, 100 ft push                           |
| (3) | D10N, 100 ft push                           |
| (3) | D10N, 100 ft push                           |
| (4) | D10N, ripping 1.25 mph                      |
| (5) | D10N, 50 ft push, 1 ft depth                |
| (6) | hay mulch \$75, spread & disc \$35          |
| (7) | fertilizer \$80, spread \$10                |
| (8) | \$90 seed, \$80 tractor & drill, \$10 labor |
| (9) | \$174 seed, \$10 labor                      |
| (1) | DOGM estimate                               |
| (1) | from old DOGM estimate                      |
| (1) | DOGM: 1 dozer, 1 truck                      |
| (1) | DOGM  |

#### ESTIMATES OF VOLUMES

sand estimate of volume

area	depth	CY
22	1	35,493

overburden estimate of volume

22	4	141,973
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topsoil estimate of volume

22	0.67	23,662
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berm estimate of vol

5	10	80,667
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